Best Practice in Blood Pressure Monitoring

Blood pressure monitoring needs to be correct in order to ensure correct diagnosis and treatment. There are two arms to best practice blood pressure monitoring, using the correct equipment for the circumstances under which the blood pressure is being recorded and using the correct technique.

This section includes:

- Blood pressure measurement with Mercury Blood Pressure Monitors—BHS
- Blood pressure measurement with Electronic Blood Pressure Monitors—BHS
- Lists of validated Blood Pressure Devices—BHS
- Presentation delivered at PACE Events
- Information on the eLearning Packages available on Hypertension and Measuring Blood Pressure

Blood Pressure Measurement

With Electronic Blood Pressure Monitors

- The patient should be seated for at least 5 minutes, relaxed and not moving or speaking
- The arm must be supported at the level of the heart. Ensure no tight clothing constricts the arm
- Place the cuff on neatly with the indicator mark on the cuff over the brachial artery. The bladder should encircle at least 80% of the arm (but not more than 100%)
- Most monitors allow manual blood pressure setting selection where you choose the appropriate setting. Other monitors will automatically inflate and re-inflate to the next setting if required
- Repeat three times and record measurement as displayed. Initially test blood pressure in both arms and use arm with highest reading for subsequent measurement

Cuff Sizes

Indication	Width (cm)*=	Length (cm)*=	BHS Guidelines Bladder width & length (cms)*	Arm circ. (cm)*
Small Adult/Child	10 - 12	18 - 24	12 x 18	< 23
Standard Adult	12 - 13	23 - 35	12 x 26	< 33
Large Adult	12 - 16	35 - 40	12 x 40	< 50
Adult Thigh Cuff**	20	42		< 53

** The range for columns 2 and 3 are derived from recommendations from the British Hypertension Society (BHS), European Hypertension Society (ESH) and the American Heart Association. Columns 4 and 5 are derived from only the BHS guidelines.*

*** Large bladders for arm circumferences over 42cm may be required*

= Bladders of varing sizes are available so a range is provided for each indication (applies to columns 2 and 3)

Points to note:

If checking against a mercury sphygmomanometer the blood pressure may differ slightly between devices.

It is good practice to occasionally check the monitor against a mercury sphygmomanometer or another validated device.

It is important to have a monitor calibrated according to manufacturer's instruction.

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Ref - 1784a

Blood Pressure Measurement

With Mercury Blood Pressure Monitors

- The patient should be seated for at least 5 minutes, relaxed and not moving or speaking
- The arm must be supported at the level of the heart. Ensure no tight clothing constricts the arm
- Place the cuff on neatly with the centre of the bladder over the brachial artery. The bladder should encircle at least 80% of the arm (but not more than 100%)
- The column of mercury must be vertical, and at the observers eye level
- Estimate the systolic beforehand:

a) Palpate the brachial artery
b) Inflate cuff until pulsation disappears
c) Deflate cuff
d) Estimate systolic pressure

- Then inflate to 30mmHg above the estimated systolic level needed to occlude the pulse
- Place the stethoscope diaphragm over the brachial artery and deflate at a rate of 2-3mm/sec until you hear regular tapping sounds
- Measure systolic (first sound) and diastolic (disappearance) to nearest 2mmHg

Cuff Sizes

Indication	Width (cm)*=	Length (cm)*=	BHS Guidelines Bladder width & length (cms)*	Arm circ. (cm)*
Small Adult/Child	10 - 12	18 - 24	12 x 18	< 23
Standard Adult	12 - 13	23 - 35	12 x 26	< 33
Large Adult	12 - 16	35 - 40	12 x 40	< 50
Adult Thigh Cuff**	20	42		< 53

** The range for columns 2 and 3 are derived from recommendations from the British Hypertension Society (BHS), European Hypertension Society (ESH) and the American Heart Association. Columns 4 and 5 are derived from only the BHS guidelines.*

*** Large bladders for arm circumferences over 42cm may be required*

= Bladders of varing sizes are available so a range is provided for each indication (applies to columns 2 and 3)

Points to note:

The date of next servicing should be clearly marked on the sphygmomanometer (6 monthly).

All maintenance necessitating handling of mercury should be conducted by the manufacturer or specialised service units.

Anaeroid manometers tend to deteriorate and need regular checking. In many instances aneroid monitors cannot be corrected accurately therefore they should not be used as a substitute for mercury sphygmomanometers.

Designed & Printed by Media Services, SGHMS
Ref - 1784b

Automatic Digital Blood Pressure Devices for clinical use and also suitable for home/self assessment

Device / Grade	Cost (rrp) (incl VAT)	Cuff sizes	Weight (g)	Dimensions (l x w x h, mm)	Number/type of batteries
A+D-767 [1] **BHS A/A**	**£69.99 (April 2004)**	Small adult (l 18-22 cm) Standard adult (l 32-42 cm) Large adult (l 32-42 cm)	**380**	**160 x 105 x 70**	**4 x AA Alkaline (included) or NiMH rechargeable**
A+D-779 [2] **International Protocol**	**£71.36 (April 2004)**	Small adult (l 18-22 cm) Standard adult (l 32-42 cm) Large adult (l 32-42 cm)	**380**	**140 x 135 x 80**	**4 x AA Alkaline (included) or NiMH rechargeable**
A+D-787 [3] **International Protocol**	**£89.99 (April 2004)**	Small adult (l 18-22 cm) Standard adult (Easy cuff) (l 32-42 cm) Large adult (l 32-45 cm)	**400**	**160 x 110 x 70**	**4 x AA Alkaline (included) or NiMH rechargeable or AC adapter (TB-182U = £20)**
Microlife 3BT0-A [6] **BHS A/A**	**£59.95 (April 2005)**	Standard adult (l 22-32cm) Large adult (l 32-42cm)	**430**	**180 x 114 x 75**	**4 x AA (included) or AC adapter (buy separately)**
Microlife 3BTO-A(2) BHS A/A	**£79.95 (April 2005)**	Medium Adult 22-32 cm and Large Adult 32-42 cm (both included. The Microlife 3BTO-A(2) has been specifically designed for BP measurement during pregnancy. With weight gain through pregnancy being usual, arm circumference increases can mean the woman gradually moves from a standard adult to a large adult cuff requirement. The inclusion of the large cuff with this monitor (hence the (2) in its name) therefore ensures that accurate readings can be maintained without any further expense.	**430 (with batteries & cuffs = 655g)**	**180 x 114 x 75**	**4 x AA (included). Mains adapter available from Microlife at £19.95**
Microlife 3AG1 [6$] **BHS A/A**	**£49.95 (April 2005)**	Standard adult (l 22-32cm) Large adult (l 32-42cm)	**365**	**130 x 105 x 52**	**4 x AA (included) or AC adapter (buy separately)**
Microlife As easy as 123	**£44.98 (April 2005)**	Medium Adult 22-32 cm (included). Large Adult 32-42 cm available from Microlife.	**335 (with batteries & cuff =**	**115 x 155 x 60**	**4 x AA (included). Mains adapter available from**

BHS A/A			**580g)**		**Microlife at £19.95**
Microlife 3AC-1 International Validation	**£79.95 (April 2005)**	Standard adult 22-32 cm (included). Large adult cuff available from Microlife (32-42 cm)	**425 (with batteries & cuff = 650g)**	**180 x 114 . 75**	**4 x AA (included). Mains adaptor available from Microlife**
Omron M5-I [5] International Protocol	**£89.95 (May 2005)**	Small (17-22cm) Standard (22-32cm) Large (32-42cm)	**530**	**177 x 72 x 115**	**4 x AA Battery**
Omron 705-IT [5] International Protocol	**£169.95 (May 2005)**	Small (17-22cm) Standard (22-32cm) Large (32-42cm)	**380**	**177 x 115 x 71**	**4 x AA Battery**
Omron 705-CPII [5#] International Protocol	**£149.95 (May 2005)**	Small (17-22cm) Standard (22-32cm) Large (32-42cm)	**380 + Printer wt**	**177 x 115 x 71**	**4 x AA Battery**

NiMH = Nickel metal hydride (rechargeable batteries)
# = same algorithm as the 705 IT
$ **=** same algorithm as the 3BT0-A

Go to the archive for a list of discontinued approved devices

Distributors

A&D Instruments Ltd
24 Blacklands Way ,
Abingdon Business Park,
Abingdon,
Oxon,
OX14 1DY
Tel: 01235 550 420
Fax: 01235 550 485

Website: www.andinstruments.co.uk

Omron Healthcare (UK) Limited
Opal Drive
Fox Milne,
Milton Keynes
MK15 0DG
Tel: 0870 750 2771
Fax: 01908 258286

Email: info.omronhealthcare.uk@eu.omron.com
Website: www.omron-healthcare.com

Microlife Health Management Ltd
6 & 7 Henfield Business Park
Shoreham Road
Henfield
West Sussex
BN5 9SL
Tel: 0845 2225 123 (lo-call number)
Fax: 01273 493986

Email: info@microlife.uk.com
Website: www.microlife.uk.com

References

Please note that monitors that have been validated in pregnant women do not necessarily mean that they are validated in those with pre-eclampsia

1. Rogoza AN, Pavlova, TS, Sergeeva, MV. Validation of A&D UA-767 device for the self-measurement of blood pressure. Blood Pressure Monitoring 2000; 5:227-231

2. Daniele L, Olivio B, Gianluca T, Paola F, and Palatini P. Validation of the A&D UA-631 (UA-779 Life Source) device for self-measurement of blood pressure and relationship between its performance and large artery compliance. Blood Pressure Monitoring. 2002; 7:1-6

3. Longo D, Toffanin G, Garbelotto R, Zaetta V, Businaro L, Palatini P. Performance of the UA-787 oscillometric blood pressure monitor according to the European Society of Hypertension protocol. Blood Pressure Monitoring 2003; 8(2):91-95

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5. El Assaad MA, Topouchian JA, Asmar RG. Evaluation of two devices for self-measurement of blood pressure according to the international protocol: the Omron M5-I and the Omron 705-IT Blood Pressure Monitoring 2003; 8(3):127-133

6. Cuckson AC, Reindeers A, Shabeeh H, Shennan AH (2002) Validation of the Microlife BP 3BTO-A oscillometric blood pressure monitoring device according to a modified British Hypertension Society protocol. Blood Pressure Monitoring 7: 319-324

Automatic Digital Blood Pressure Devices for clinical use*

*These blood pressure monitors are robust and so are most suitable in wards and clinics where they are frequently moved

Device/ Grade	Cost (rrp) (incl VAT)	Cuff sizes	Weight (g)	Dimensions (l x w x h, mm)	Number/type of batteries
Accutor Plus [1] **BHS A/A**	**£1495 (April 2004)**	Children (l 13.8-21.5cm) Standard adults (l 27.5-36.5cm) Large adults (l 35-46cm)	**tbc**	**tbc**	**tbc**
Omron 907 [2,3] **International Protocol**	**£358.80 (April 2004)**	Small adult (l 17-22cm) Standard adult (l 22-32cm) Large adult (l 32-42cm)	**910g**	**203 x 139 x 131**	**AC Adapter (with battery pack)**
Vital Signs [4] **BHS A/A**	**£1323 (April 2004)**	Newborn children (l 7.7-10.5cm) Infants (l 9.8-13.3cm) Small children (l 12.4-16.8cm) Small adults (l 20-27cm) Standard adults (l 25.3-34.3cm) Large adults (l 32.1-43.4cm) Thigh cuff (l 40.7-55cm)	**tbc**	**tbc**	**tbc**
Smart signs SL 500 AC [5,6] **(same as BPM-100) BHS A/A**	**£ 495 (April 2004)**	Small adult (9 x 17 cm) Standard adults (12 x 33cm) Large adults (15 x 33cm)	**4000**	**300 x 300 x 200**	**AC Adapter only**
Smart signs SL 500 BAT [5,6#] **(same as BPM-200) BHS A/A**	**£575 (April 2004)**	Small adult (9 x 17 cm) Standard adults (12 x 33cm) Large adults (15 x 33cm)	**4000**	**300 x 300 x 200**	**Battery operated only**
Smart signs SL 510 AC [5,6#] **(same as BPM-300) BHS A/A**	**£750 (April 2004)**	Small adult (9 x 17 cm) Standard adults (12 x 33cm) Large adults (15 x 33cm)	**4000**	**300 x 300 x 200**	**AC adapter only**
BPM-100 [5,6] **BHS A/A**	**Details not available**	Small adult (9 x 17 cm) Standard adults (12 x 33cm) Large adults (15 x 33cm)	**4000**	**300 x 300 x 200**	**AC Adapter only**
BPM-200 [5,6$] **BHS A/A**	**Details not available**	Small adult (9 x 17 cm) Standard adults (12 x 33cm) Large adults (15 x 33cm)	**4000**	**300 x 300 x 200**	**Battery operated only tbc**
BPM-300 [5,6$] **BHS A/A**	**Details not available**	Small adult (9 x 17 cm) Standard adults (12 x 33cm) Large adults (15 x 33cm)	**4000**	**300 x 300 x 200**	**AC adapter only**

= same algorithm as the SL 500 AC $ = same algorithm as the BPM-100
NB the Smartsigns range are the same as the BPM range (BPM are the generic machines)

Go to the archive for a list of discontinued approved devices
(NB there are no discontinued approved automatic devices for clinical use listed)

Distributors

Datascope Medical Co. Ltd (Accutorr Plus)
Lakeview Court, Ermine Business Park, Huntingdon, PE29 6XR
Tel. 01480 423600
Fax. 01480 423638
Web: http://www.datascope.com

Omron Healthcare (UK) Limited
Opal Drive, Fox Milne, Milton Keynes, MK15 0DG
Tel: 0870 750 2771
Fax: 01908 258286
E-mail: info.omronhealthcare.uk@eu.omron.com
Website: www.omron-healthcare.com

Welch Allyn (Vital Signs)
Cublington Road, Aston Abbotts, Buckinghamshire, HP22 4ND
Tel. 01296 682140
Fax. 01296 682104
Web: http://www.welchallyn.com/

Huntleigh Healthcare Ltd (Smartsigns)
35 Portmanmoor Road
Cardiff
CF24 5HN
Tel: 02920 485885
Fax: 02920 492529
Web: www.hunleigh-healthcare.com

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6. Mattu, G. S.; Perry, T. L.; Wright, J. M. Comparison of the oscillometric blood pressure monitor (BPM-100Beta) with the auscultatory mercury sphygmomanometer Blood Pressure Monitoring, 2001;6(3):153-160

Ambulatory Blood Pressure Measuring Devices Oscillometric Mode

Device/ Grade	Cost (rrp) (incl VAT)	Cuff sizes	Weight (g)	Dimensions (l x w x h, mm)	Number/type of batteries/ AC adapter (as approp.)
SL90217 [1]	**tbc**	Children (l 13-20cm) Small adult (l 17-26cm), Standard adult (l 24-32cm) Large adult (l 32-42cm) Extra large adult (l 38-50cm)	**tbc**	**tbc**	**tbc**
SL90207 [2]	**tbc**	Children (l 13-20cm) Small adult (l 17-26cm) Standard adult (l 24-32cm) Large adult (l 32-42cm) Extra large adult (l 38-50cm)	**tbc**	**tbc**	**tbc**
TM-2430 [3]	**£1,586.25 includes software**	Small adult (l 15-22cm) Standard adult (l 20-31cm) Large adult (l 28-36cm)	**212**	**100 x 70 x 27**	**3 x AA NiMH rechargeable (included) or AA Alkaline**
TM-2421 [4]	**£1,169.00 includes software**	Small adult (l 15-22cm) Standard adult (l 20-31cm) Large adult (l 28-36cm)	**370**	**150 x 80 x 45**	**Rechargeable unit (4 x NiCd) included with AC Adapter**
ABP-2000 [5] **BHS A/B**	**tbc**	Tbc	**tbc**	**tbc**	**tbc**
Mobil O Graph [6,7] **BHS B/A**	**tbc**	Small adult (l 20-24cm) Standard adult (l 24-32cm) Large adult (l 32-42cm)	**tbc**	**tbc**	**tbc**
Daypress 500 [8] **BHS A/B**	**tbc**	Tbc	**tbc**	**tbc**	**tbc**
ES-H531 [9] **BHS B/B**	**Details not found**	Details not found	**Details not found**	**Details not found**	**Details not found**
Meditech ABPM-04 [10] **BHS B/B**	**tbc**	Small adult (l <24cm) Standard adult (l 24-32cm) Large adult (l 32-42cm) Extra large adult (l 42-55cm)	**tbc**	**tbc**	**tbc**

Tensioday [11]	**Details not found**	Details not found	**Details not found**	**Details not found**	**Details not found**
Save 33, Model 2 [12] BHS B/B	**Details not found**	Details not found	**Details not found**	**Details not found**	**Details not found**
Nissei DS-240 [13] BHS B/A	**Details not found**	Details not found	**Details not found**	**Details not found**	**Details not found**

Go to the archive for a list of discontinued approved devices

Distributors

Spacelabs Medical UK Ltd (SL range)
Berkshire
RG11 5TS
Tel: 0118 9773100
Website: http://www.spacelabs.com

A&D Instruments Ltd (TM range)
24 Blacklands Way,
Abingdon Business Park,
Abingdon,
Oxon,
OX14 1DY
Tel: 01235 550 420
Fax: 01235 550 485
Website: www.andinstruments.co.uk

Biotrac, Inc (ABP-2000)
7215 NW 46th Street
Miami
FL 33166
U.S.A.
Tel. (305) 594-7474
Fax. (509) 267-2283
Website: http://www.biotracmed.com/

I.E.M. GmbH (Mobil O Graph)
Cockerillstraße 69,
D-52222 Stolberg/Germany
Tel.: +49 (2402) 95 00-0,
Fax: +49 (2402) 95 00-11
Website: http://www.iem.de

Meditech Ltd (Medictech).
200 Ulloi ut, Budapest
H- 1191 Hungary
phone: 36 1 280 8232; 36 1 280 82 33
fax: 36 1 282 9388
e-mail: meditech@meditech.hu

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1. Baumgart P, Kamp J. Accuracy of the SpaceLabs Medical 90217 ambulatory blood pressure monitor. Blood Pressure Monitoring 1998; 3: 303-307

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Ambulatory Blood Pressure Measuring Devices Auscultatory Mode

Device/ Grade	Cost (rrp) (incl VAT)	Cuff sizes	Weight (g)	Dimensions (l x w x h, mm)	Number/type of batteries/ AC adapter (as approp.)
CH-DRUCK [1] BHS A/A	**Details not available**	Details not available	**Details not available**	**Details not available**	**Details not available**
Schiller BR-102 [2] BHS B/B	**tbc**	tbc	**tbc**	**tbc**	**tbc**
ES-H531 [3] BHS A/A	**Details not available**	Details not available	**Details not available**	**Details not available**	**Details not available**
DIASYS integra [4] BHS B/A	**Details not available**	Details not available	**Details not available**	**Details not available**	**Details not available**
Profilomat [5] BHS B/A	**Details not available**	Details not available	**Details not available**	**Details not available**	**Details not available**

Go to the archive for a list of discontinued approved devices

Distributor

Schiller AG (Schiller)
Altgasse 68
P.O. Box 1052
CH-6341 Baar
Switzerland
Phone +41 41 766 42 42
Fax +41 41 761 08 80
Website: http://www.schiller.ch

References

1. O'Brien E, Mee F, Atkins N, O'Malley K. (1993) Accuracy of the CH- Druck/Pressure ERKA ambulatory blood pressure measuring system determined by the British Hypertension Society protocol. J Hypertens 11(suppl 2):S1-S7

2. Mee F, Atkins N, O'Brien E. (1999) Evaluation of the Schiller BR-102 ambulatory blood pressure system according to the protocols of the BHS and AAMI. Blood Pressure Monitoring. 4 : 35-43

3. Kuwajima I, Nishinaga M, Kanamaru A. (1998) The accuracy and clinical performance of a new compact ambulatory blood pressure measuring device, the ES-H531. Am J Hypertens. 11 : 1328-1333

4. Gosse P, Laforge A, Ansborto P et al. (1997) Clinical evaluation of the DIASYS integra blood pressure recorder [Abstract]. J Hypertens. 15 (suppl): 18S

5. O'Brien E, Mee F, Atkins N, O'Malley K. (1993) Accuracy of the Profilomat ambulatory blood pressure measuring system determined by the British Hypertension Society protocol. J Hypertens. 11 (suppl 2):S9-S15

NON-INVASIVE BLOOD PRESSURE MEASUREMENT EQUIPMENT

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Medical Physics
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Bradford Teaching Hospitals NHS
An NHS Foundation Trust

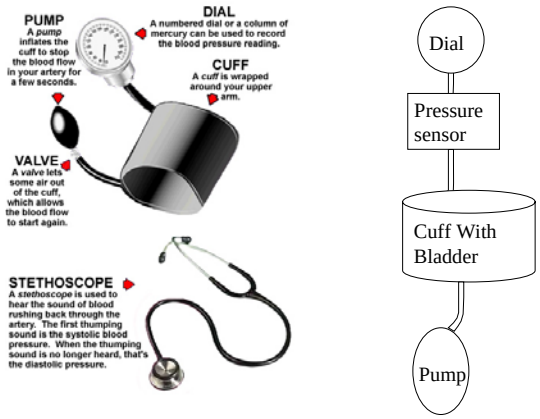
NON-INVASIVE BLOOD PRESSURE MEASUREMENT EQUIPMENT

DEVICES
VALIDATION
CALIBRATION
MAINTENANCE

NIBP DEVICES

MANUAL	AUTOMATIC
Mercury	None cycling
Aneroid	Semi-Automatic
Electronic Manual	Automatic Cycling*
	Ambulatory*

* Not discussed here


PUMP
A pump inflates the cuff to stop the blood flow in your artery for a few seconds.
DIAL
A numbered dial or a column of mercury can be used to record the blood pressure reading.
CUFF
A cuff is wrapped around your upper arm.
VALVE
A valve lets some air out of the cuff, which allows the blood flow to start again.
STETHOSCOPE
A stethoscope is used to hear the sound of blood rushing back through the artery. The first thumping sound is the systolic blood pressure. When the thumping sound is no longer heard, that's the diastolic pressure.
Dial
Pressure sensor
Cuff With Bladder
Pump

MANUAL METHODS OF BLOOD PRESSURE MONITORING

Pressure sensor / dial can be :

- mercury column
- pressure guage (aneroid)
- Electronic transducer (electronic manual)

Mercury Sphygmomanometer

Aneroid Sphygs come in all shapes and sizes

ELECTRIC
MANUAL

? MANDAUS

ACCOSOn "**green**light 300"

VALIDATION 1

- In the past most studies for diagnosis and treatment were done with the mercury sphyg.
- So now the mercury sphyg. is still taken as the gold standard
- All other types of NIBP devices should have been checked (validated) to see if they give the same results.
- Only validated devices should be used in the clinical setting

VALIDATION 2

- Test usually arranged by the manufacturer done by a test house and results published
- Test must use BHS, AAMI or International Protocol
- Should have been done for all except mercury sphygs.
- Must have been done for automatic NIBP devices

VALIDATION 3

- List of validated devices on BHS website or contact Medical Physics, BRI

CALIBRATION

• Mercury Devices		Annually
• Aneroid		Every six months
• Automatic		Every two years
	Or	as per Manufacturers Advice

Mercury Sphygmomanometer

MERCURY DEVICES

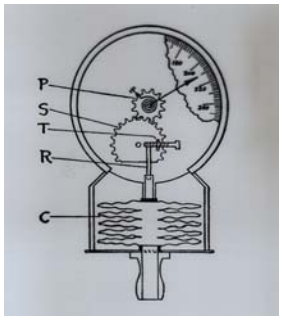
ADVANTAGES

- Gold Standard
- Can be used for all patients

DISADVANTAGES

- Mercury column may need maintenance
- May not wish to transport in car
- Spills
- User must be trained
- User must have good hearing

Aneroid Sphygs come in all shapes and sizes



Aneroid sphygmomanometer

ANEROID DEVICES

ADVANTAGES

- No mercury
- Widely available
- Inexpensive

DISADVANTAGES

- Easily damaged by dropping/ knocking
- Must be calibrated every six months
- User must be trained
- User must have good hearing
- Should be validated

ANEROID DEVICES

RECOMMENDATION

Purchase only those with protection against overpressure and mechanical shock

MANUAL ELECTRONIC

ADVANTAGES

- No mercury
- Easily calibrated annually

DISADVANTAGES

- Must be validated
- User must be trained
- User must have good hearing

ELECTRIC MANUAL

? MANDAUS

ACCOSOn "**green**light 300"

AUTOMATIC NON-CYCLING

ADVANTAGES

No mercury

Staff easily trained

DISADVANTAGES

Must be validated

Cannot be used in all circumstances

Eg pregnant women, older patients, patients with arrythmias

Re-calibration difficult

AND UA767 BLOOD PRESSURE MONITOR

OMROM 705CP

Areas of use for different NIBP devices

Area	Mercury	Aneroid	Electronic Manual	Automatic (non-cycling)	Automatic Cycling
Critical Care	✞	✞	✞	✞*	✞*
Wards	✞	✞	✞	✞*	✞*
Outpat. Depts	✞	✞	✞	✞*	✞*
GP 's premises	✞	✞	✞	✞*	✞*
Patient's Home	✞	✞	✞	✞*	✞*

* Caution with elderly, pregnant and patients with arrythmias

CALIBRATION AND MAINTENANCE

- Keep clean, wash cuffs as recommended
- Ensure Velcro fastenings still work
- Inspect regularly for worn tubing, leaks in cuffs and valves.
- Have calibrated as required by manufacturer and after any mechanical shock
- Keep records of maintenance / calibration

CHILDREN

AAMI AND BHS recommend that automated devices only used with caution in children

Cuff size important – several required

4x13cm, 10x 18cm 12x 26cm

PREGNANCY

AAMI AND BHS recommend that automated devices only used with caution in monitoring pregnancy

They may clinically underrecord BP in pre-eclamptic patients

CUFFS

Bladder size important

Should encircle 80% of the arm circumference

Bladder too long gives underestimation of blood pressure (undercuffing)

Bladder too short gives overestimation of BP (overcuffing)

Standard size for an adult is 12-13cm

Children need range of sizes 4x13cm, 10x18cm 12x26cm

TRAINING

- Every user of BP equipment should have been trained in its use
- All devices including automatic ones still require the operator to prepare and position the patient and select the cuff
- For manual devices they must be trained in hearing and interpreting the Korotkoff sounds

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Hypertension

eLearning Package

This online training package is based on the PACE Hypertension Guideline and is aimed at clinical staff working within the NHS.

Free to NHS and Social Care Staff in Bradford

This package will test your knowledge using a series of short exercises.

You can dip in and out of the modules as a when you have the time and the package will monitor your progress

Objectives

- Accurately detect hypertension
- Understand what treatment is appropriate for different levels of the condition
- Know what types and combinations of drugs are appropriate
- Be able to dispense lifestyle advice.

Who should you CONTACT ?

Kathryn Lamb

ELearning Project Manager

kathryn.lamb@bradford.nhs.uk

Complete the online request form at

www.learnonline.nhs.uk/eLearning/Hypertension.htm

www.learnonline.nhs.uk

NHS
Bradford Health
& Social Care
Community

Measuring Blood Pressure

eLearning Package

bhp
NHS
What is blood pressure?
Blood is carried from the heart to all of the body's tissues and organs in vessels called arteries
Blood pressure is the force of the blood pushing against the artery walls
When at rest the heart beats around 60 to 70 times a minute
Blood pressure measuring equipment

This interactive package is aimed at anyone that measures blood pressure.

Available free for Health and Social Care staff in the Bradford District.

Developed by local subject experts this package will test your knowledge and understanding.

Available online you can dip in and out of the modules as a when you have the time and the package will monitor your progress.

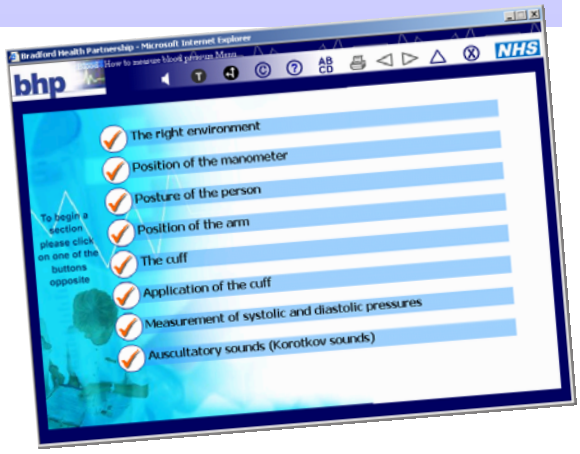
- What is blood pressure?
- What can go wrong when measuring blood pressure?
- Factors which affect blood pressure
- Current Validated BP measuring equipment
- How to measure blood pressure accurately

Who should you CONTACT ?

Kathryn Lamb

ELearning Project Manager

Email: kathryn.lamb@bradford.nhs.uk



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